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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,302	02/28/2002	Bjorn Heismann	P02,0057	7544
26574	7590	03/01/2004	EXAMINER	
SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			DINH, TUAN T	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/085,302

Applicant(s)

HEISMANN ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 3,7-11 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6 and 12-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### **DETAILED ACTION**

1. Applicant's election of Specie I (figure 2, claims 1-2, and 4-15) in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The limitations of claims 7-11, and 15 do not read on figure 2, which are elected by applicant in paper #5 because the figure 2 does not disclose the limitations of "one of the two contacts of each of the photodiodes is respectively connected to the metal and another contact is connected to a conductor track (claims 7-8, and 15)." They would rather show in figure 3 (figure 3 is a different embodiment of figure 2). Therefore, claims 7-11, and 15 are withdrawn from further consideration as being drawn to non-elected subject matter.

### ***Claim Objections***

2. Claims 1, 4 are objected to because of the following informalities:

Claim 1, line 6, "the improvements" should be --the printed circuit board arrangement—for proper antecedent basis.

Claim 1, line 7, "the clearance" should be --the opening-- for proper antecedent basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 4 recites the limitation "the flexible layer" in line 2. There is improper antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 4, and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Cohn et al. (U. S. Patent 6,465,882).

As to claim 1, Cohn et al. discloses a printed circuit board (PCB) arrangement in figure 5-6 with a flexible layer arrangement (100-figure 5, see an attaching paper including elements 30, 20, 34, 24, and 48), in which at least one electrically conductive layer with a large number of conductor tracks (30, 34, and 36) lying next to one another is accommodated and surrounded by electrically isolating layers (20, 24), the flexible layer arrangement being firmly connected in portions to at least one printed circuit board (200-figure 5, see an attaching paper including elements 46, 32, and 22) suitable for accommodating a component (IC chip 75, column 3, line 45) for forming a fixed portion,

Art Unit: 2827

and an opening (cavity 50, column 3, line 18) extending as far as the conductor tracks (30) being provided in the region of the fixed portion, the PCB arrangement comprising the opening (50) passing through the printed circuit board to enable contacting the conductor tracks (30) with the component (75), see figure 6.

As to claim 2, Cohn et al. discloses the PCB arrangement in figures 5-6 which has a plurality of electrically conductive layers (30, 34, and 36) being arranged one on top of the other and being separated from one another by electrically isolating layers (20, 24) in the flexible layer arrangement.

As best understood to claim 4, Cohn et al. discloses the PCB arrangement in figures 5-6 wherein the electrically conductive layer (30) situated on a surface of the flexible layer arrangement is formed as a shielding layer (element 30 acts as a ground plane, the ground plane having functions such as ground or shield, column 3, lines 33-35).

As to claims 13-14, Cohn et al. discloses the PCB arrangement in figures 5-6 wherein the opening (50-figure 5), after forming the connection, is filled with a casting compound (see figure 6), and the casting compound is a plastic (column 3, lines 52-53).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2827

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohn et al. (U. S. Patent 6,465,882) in view of Haas (U. S. Patent 5,121,297).

As to claim 5, Cohn et al. does disclose all of the limitations of the claimed invention as explained in claim 1, except for the electrically isolating layers are produced from a polyamide.

Haas shows flexible printed circuits as shown in figures 1-2 comprising an insulating core material made of polyamide (column 5, lines 61-62, column 7, line 61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a polyamide material applied in the PCB arrangement of Cohn et al., as taught by Haas, for the purpose of providing a highly tear resistant and enhanced flexibility.

9. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohn et al. (U. S. Patent 6,465,882) in view of Marcovici et al. (U. S. Patent 6,292,529).

As to claims 6 and 12, Cohn et al. does disclose all of the limitations of the claimed invention as explained in claim 1, except for the component, which is a detector module having a large number of photodiodes.

Marcovici et al. shows a X-ray detector system comprising a detector array including a large number of photodiodes (14), see column 1, lines 52-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a component, which is a detector module having

Art Unit: 2827

photodiodes in the PCB arrangement, as taught by Marcovici et al, for the purpose of detecting temperatures and converting lights into electrical signals.

**Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hamzehdoost et al., Okumura et al., and Von Der Haar disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinah whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sammie Canoe can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Dinah  
February 02, 2004.

A handwritten signature in black ink, appearing to read 'Tuan Dinah', with a long, sweeping horizontal line extending to the right.